What is claimed is:

1. A power generating and control system for a vehicle having an engine and a generator driven by said engine, said power generating and control system controlling a power generating state of the generator and comprising: a deceleration detector for detecting deceleration of the vehicle; a first power supply comprising a main battery for the vehicle connected in every operating state to said generator; a second power supply comprising a sub-battery for the vehicle and connected to said generator only when a power supply connecting condition is satisfied; and a switching arrangement connecting said generator and said second power supply when the vehicle is decelerating or when a charge quantity of said second power supply is greater than a predetermined value.

2. A power generating and control system according to Claim 1, wherein said generator comprises an alternator driven by said engine.

3. A power generating and control system according to Claim 1, wherein said vehicle comprises a hybrid vehicle, and said generator includes a motor generator with driving and power generating functions directly connected to an output shaft of said engine.

4. A power generating and control system according to Claim 1, wherein said second power supply provides power to an electric load of the vehicle only when the charge quantity thereof is higher than a predetermined value.

5. A power generating and control system according to Claim 1, wherein said switching arrangement connects said first power supply and said generator at engine startup.

6. A power generating and control system according to Claim 1, wherein said main battery comprises a 12 volt system battery, and said sub-battery comprises a capacitor.

7. A power generating and control system according to Claim 1, wherein said vehicle includes an automatic stop/startup system, wherein said engine is automatically stopped when an automatic stop condition is satisfied during engine idling, and wherein said engine is automatically started when an automatic startup condition is satisfied when said engine is stopped.

8. A power generating and control system for a vehicle having an engine and a generator driven by said engine, said power generating and control system controlling the power generating state of the generator, and comprising: a deceleration detector for detecting deceleration of the vehicle; a first power supply comprising a main battery for the vehicle connected in every operating state to said generator; a second power supply comprising a sub-battery for the vehicle, said sub-battery being connected to said generator only when a power supply connecting condition is satisfied; and a switching arrangement preventing said generator from generating power when a charge quantity of said second power supply is greater than a predetermined value when said engine is restarted after deceleration of said vehicle and vehicle stoppage.

9. A power generating and control system for a vehicle having an engine and a generator driven by said engine, said power generating and control system controlling a power generating state of the generator and comprising: a deceleration detector for detecting deceleration of the vehicle; a first power supply comprising a main battery for the vehicle connected in every operating state to said generator; a second power supply comprising a sub-battery for the vehicle, said second power supply being connected to said generator only when a power supply connecting condition is satisfied; and a switching arrangement preventing said generator from generating power when a charge quantity of said second power supply is greater than a predetermined value.

10. A power generating and control system for a vehicle having an engine and a generator driven by said engine, said power generating and control system controlling a power generating state of the generator and comprising: a deceleration detector arrangement for detecting deceleration of the vehicle; a first power supply comprising a main battery for the vehicle connected in every operating state to said generator; a second power supply comprising a sub-battery for the vehicle connected to said generator only when a power supply connecting condition is satisfied; a first switch section for connecting said generator and said second power supply only when said power supply connecting condition is satisfied; a second switch section for connecting said first and second power supplies only when a second said power supply connecting condition is satisfied; and a switching arrangement controlling said

first and second switch sections so that said generator and said second power supply are not connected when said first and second power supplies are connected.

11. The power generating and control system of Claim 10, wherein said main battery is connected in every operating state to receive power from said generator and in other operating states to receive power from or send power to said generator.

12. A power generating and control system for a vehicle having an internal combustion engine, comprising:

an alternator driven by the engine;

a deceleration detector for detecting deceleration of the vehicle;

a main battery connected to said alternator to receive energy from said alternator in every operating state wherein said alternator produces energy; and

a sub-battery for connection to said generator only when a predetermined condition is satisfied; and

wherein, when the predetermined condition is vehicle deceleration, said sub-battery is connected to said alternator and said alternator charges said sub-battery and said main battery.

13. The power generating and control system of Claim 12, wherein an idle switch is turned on and fuel is cut to said engine during deceleration of the vehicle.

14. The power generating and control system of Claim 12, wherein, after said vehicle decelerates and said vehicle stops, said alternator continues to apply charge to said sub battery.

15. The power generating and control system of Claim 14, wherein, after said vehicle stops and said engine stops, said alternator stops charging said sub battery when a voltage of said sub battery is greater than a predetermined value.

16. The power generating and control system of Claim 15, wherein, after said engine stops and said alternator stops, said sub-battery provides power to said electrical load and maintains the voltage of said main battery.

17. The power generating and control system of Claim 16, wherein said sub battery restarts said vehicle and said alternator remains off during subsequent vehicle acceleration until said sub battery voltage is less than power consumption of said electrical load.

18. The power generating and control system of Claim 12, wherein when said vehicle is started with the predetermined condition that the voltage of said sub-battery is less than a predetermined voltage, said alternator charges said main battery and said sub-battery, and wherein when said vehicle is in normal operation said sub-battery is disconnected from said alternator and said main battery.

19. The power generating and control system of Claim 12, wherein, when said sub battery is fully charged and said engine is turned off, said alternator is disconnected and said sub-battery supplies power to an electrical load of the vehicle.

20. The power generating and control system of Claim 19, wherein said vehicle is a non-hybrid vehicle.